

U.S. PATENT APPLICATION

OF

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FOR

END CAP APPARATUS

## END CAP APPARATUS

### CROSS-REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of commonly owned and copending U.S. Provisional Application Serial No. 60/453,844, filed March 11, 2003.

## BACKGROUND OF THE INVENTION

## 1. Field of the Invention

The present invention relates to an end cap for holding a price label.

## 2. Problem to be Solved

When a retail store, such as a grocery store, offers products for sale on shelves, store employees typically attach hand written or pre-printed signs or other advertisements to the shelves in order to inform customers of price or product information. Such a practice is time consuming and inconvenient. Furthermore, many retail stores utilize the space at the end of the aisle-long shelf units between aisles to display merchandise. This would require additional hand written or pre-printed signs. Additionally, retail stores sometimes utilize semi-circular or arc-shaped shelves at the end of the aisle-long shelf units. The shape of these shelves makes it difficult to attach such hand-written or pre-printed signs.



FIG. 1A is a cross-sectional view of the price label  
containment member shown in FIG. 1.

FIG. 2 is a perspective view of the end cap apparatus of the  
present invention completely assembled.

FIG. 3 is a side elevational view of the end cap apparatus  
of the present invention.

FIG. 4 is another perspective view of the end cap of the  
present invention showing the front side of the end cap  
apparatus.

FIG. 5 is front elevational view of the end cap apparatus of  
the present invention.

FIG. 6 is a further perspective view of the end cap of the  
present invention.

FIG. 7 is a perspective view of the rear of the end cap  
apparatus of the present invention.

FIG. 8 is perspective view of the end cap apparatus of the  
present invention illustrating the flexibility and resiliency of  
the end cap apparatus of the present invention.

FIG. 9 is a top view showing the end cap apparatus of the  
present invention attached to a generally arcuate shelf.

FIG. 10 is an exploded view, partially in cross-section,  
illustrating how a price card holder may be secured to the end  
cap apparatus of the present invention.

1        FIG. 11 is a side elevational view, partially in cross-  
2 section, showing the price card holder of FIG. 10 secured to the  
3 end cap apparatus of the present invention.

4        FIG. 12 is a side elevational view of another type of price  
5 label containment member that may be secured to the base member  
6 shown in FIG. 1.

7        FIG. 13 is a side elevational view, partially in cross-  
8 section, showing the price label containment member of FIG. 12  
9 secured to the base member shown in FIG. 1.

10       FIG. 14 is a side elevational view, in cross-section, of  
11 another type of price label containment member that may be  
12 secured to the base member shown in FIG. 1.

13       FIG. 15 is a side elevational view, partially in cross-  
14 section, showing the price label containment member of FIG. 14  
15 secured to the base member shown in FIG. 1.

16  
17                    DETAILED DESCRIPTION OF THE INVENTION

18        In the description of the invention various embodiments  
19 and/or individual features are disclosed. As will be apparent to  
20 the ordinarily skilled practitioner, all combinations of such  
21 embodiments and features are possible and can result in preferred  
22 executions of the invention.

23        In describing the preferred embodiments of the present  
24 invention, reference will be made herein to Figs. 1-15 of the

drawings in which like numerals refer to like features of the invention.

### Definitions

As used herein, the term "price label" includes electronic price labels (known as EPLs), electronic shelf labels (known as ESLs), non-electronic labels, flexible electronic or non-electronic price label, electronic or non-electronic thin labels, and non-electronic price labels. Examples of electronic price labels and electronic shelf labels with which the present invention can be used are generally described in U.S. Patent Nos. 6,107,936 and 6,551,738, the disclosures of which patents are incorporated herein by reference.

Referring to FIGS. 1-8, there is shown end cap apparatus 10 of the present invention. End cap apparatus 10 generally comprises base member 12. Base member 12 comprises support member 13. Support member 13 has front side 14 and rear side 15 (see FIG. 7). In a preferred embodiment, front side 14 is substantially planar. Base member 12 further includes brackets 16 that are attached to support member 13. Each bracket 16 has a first portion 18 and a second portion 20. In one embodiment, first portion 18 is angulated with respect to second portion 20 by angle  $\theta_1$  (see FIG. 3). In a preferred embodiment, angle  $\theta_1$  is 90 degrees. However, it is to be understood that angle  $\theta_1$  can be any other suitable angle. First and second portions 18 and 20, respectively, have openings 22. Fastening devices (not shown)

1 such as screws, tacks, nails, etc. are inserted into openings 22  
2 in order to removably attach base member 12 to a structure such  
3 as a shelf, table, pallet or other suitable structure. Referring  
4 to FIG. 3, in a preferred embodiment, support member 13 is  
5 angulated by angle  $\theta_2$  degrees with respect to portion 18 of each  
6 bracket 16. Preferably, the angle  $\theta_2$  is between about 30 degrees  
7 and 45 degrees. In a more preferred embodiment, the angle  $\theta_2$  is  
8 about 45 degrees. It is to be understood that angle  $\theta_2$  can be  
9 any other suitable angle. Thus, angles  $\theta_1$  and  $\theta_2$  can be varied  
10 to facilitate attachment of base member 12 to a variety of  
11 structures (e.g. shelf, table, etc.) having various elevations  
12 with respect to the floor. In accordance with the present  
13 invention, base member 12 is made from a material that has  
14 strength, resiliency and flexibility such as aluminum or plastic  
15 so as to allow base member 12 to flex as shown in FIG. 8.  
16 However, it is to be understood that other suitable flexible and  
17 resilient materials can be used to fabricate base member 12.  
18 Such flexibility allows base member 12 to be used on the edges of  
19 generally semi-circular or arcuate shelves or tables.

20 Referring to FIGS. 1, 2 and 4-8, end cap apparatus 10  
21 further includes guards 30 and 32 that are removably attached to  
22 front side 14. In one embodiment, guards 30 and 32 are removably  
23 attached to front side 14 with screws 34 that are inserted into  
24 openings 36 in support member 13. This embodiment is shown in

FIG. 1. In one embodiment, guards 30 and 32 are made of plastic. However, guards 30 and 32 may be fabricated from other suitable materials, e.g. rubber. In a preferred embodiment, guards 30 and 32 have a rounded and smooth shape that reduces the chances of objects, such as shopping carriages or a peoples' clothing, from becoming entangled on the edges of base member 12.

Referring to FIGS. 1-6 and 8, end cap apparatus 10 further comprises price label containment member 40 that is attached to front side 14 of support member 13. Price label containment member 40 is positioned between guards 30 and 32. In one embodiment, containment member 40 is adhered to front side 14 with an adhesive or an adhesive tape. In another embodiment, containment member 40 is removably attached to front side 14 with fasteners (not shown) such as screws or rivets. Containment member 40 includes rear or back wall 50, and lengthwise flanged end portions 52 and 54. In a preferred embodiment, lengthwise flanged end portions 52 and 54 are generally perpendicular to back wall 50. Lengthwise flanged end portion 52 includes lip 56 and lengthwise flanged end portion 54 includes lip 58 (see FIG. 1A). Lips 56 and 58 extend inward in a generally vertical direction. In one embodiment, lips 56 and 58 are generally perpendicular to lengthwise flanged end portions 52 and 54, respectively. Containment member 40 is preferably made of molded or extruded plastic. Lengthwise flanged end portions 52 and 54, respectively, are separated by a predetermined distance that



allows for a price label to be frictionally inserted between lengthwise flanged end portions 52 and 54. For example, the rear side of the EPL described in U.S. Patent No. 6,551,738 can be frictionally inserted between lengthwise end portions 52 and 54. In one embodiment, lips 56 and 58 can be frictionally inserted into grooves or channels that may be formed in an electronic price label or electronic shelf label. Thus, it is to be understood that the shape of containment member 40, including the shape of lengthwise flanged end portions 52 and 54 and lips 56 and 58, can be varied so as to accommodate back sides of EPLs or ESLs that have different shapes. In a preferred embodiment, containment member 40 is made from a material that is strong, but yet, allows containment member 40 to be flexed as shown in FIG. 8. End cap apparatus 10 can be flexed so as to facilitate attachment of end cap apparatus 10 to a semi-circular or arc-shaped shelf. Such a configuration is shown in FIG. 9 which is a top plan view showing end cap apparatus 10 attached to semi-circular or arc-shaped shelf 70. Brackets 16 are under shelf 70 and therefore are shown in phantom. Fasteners 72, such as screws, are used to attach end cap apparatus 10 to shelf 70. In one embodiment, price label containment member 40 is fabricated from extruded resin.

It is to be understood that although the foregoing description is in terms of containment member 40 being used to retain price labels, it is to be understood that containment

member 40 can be used to retain price cards holders. One example of such a price card holder is shown as price card holder 10 in U.S. Patent No. 4,557,064, the disclosure of which is incorporated herein by reference. This is illustrated in FIGS. 10 and 11 of the present application. Price card holder 100 has the same construction as price card holder 10 shown in U.S. Patent No. 4,557,064. Price card holder 100 has support portion 102 and outwardly extending ledges 104 and 106. Price card holder 100 may be flexed by a user's fingers 107 so that outwardly extending ledges 104 and 106 can be positioned between lengthwise end portions 52 and 54 of containment member 40 (see FIG. 11).

Referring to FIG. 12, there is shown an alternate price label containment member 200 which is used with base member 12 instead of containment member 40 described in the foregoing description. Containment member 200 is configured to have the same structure as price label holder 10 described in U.S. Patent No. 6,553,702 and shown in FIG. 1A of that patent. The disclosure of U.S. Patent No. 6,553,702 is incorporated herein by reference. A detailed description of containment member 200 is not necessary here since the structure of containment member 200 is identical to the structure of price label holder 10 shown in the U.S. Patent No. 6,553,702. Containment member 200 comprises base channel 202 that has an overall C-shape conformation to slidably accommodate and frictionally retain an associated

1 electronic price label. Containment member 200 further comprises  
2 L-shaped clip portion 204 connected to the C-channel 202 by way  
3 of top wall 208 and connecting arm 210. The L-shaped clip portion  
4 204 and connecting arm 210 define an upwardly open slot or  
5 channel 212 therebetween which is sized to frictionally receive  
6 support member 13 of base member 12. Referring to FIG. 13, there  
7 is shown end cap apparatus 300 which comprises base member 12 and  
8 containment member 200 wherein support member 13 of base member  
9 12 is positioned in slot 212 and frictionally engages clip 204  
10 and a portion of wall 210. Containment member 200 extends for  
11 substantially the entire length of base member 12. In accordance  
12 with the invention, containment member 200 is fabricated from  
13 flexible and resilient material to allow containment member 200  
14 to flex in the event end cap apparatus 300 is used on a semi-  
15 circular or arcuate shelf. In one embodiment, price label  
16 containment member 200 is fabricated from extruded resin.

17 Referring to FIG. 14, there is shown an alternate price  
18 label containment member 400 which is used with base member 12  
19 instead of containment member 40 described in the foregoing  
20 description. Containment member 400 is configured to have the  
21 same structure as extruded plastic snap-in price channel 10  
22 described as prior art and shown in FIG. 2 in U.S. Patent No.  
23 5,394,632. The disclosure of U.S. Patent No. 5,394,632 is  
24 incorporated herein by reference. Thus, containment member 400  
25 comprises labeling panel 402, rearwardly extending leg 404 and

1 co-extruded clear plastic front cover 406. Labeling panel 402  
2 has a barbed top portion 407. Slot or channel 408 is defined  
3 between labeling panel 402 and front cover 406. The dimensions  
4 of slot 408 allow support member 13 of base member 12 to be  
5 inserted in slot 408 so as to frictionally contact barbed portion  
6 407 and front cover 406. Referring to FIG. 15, there is shown  
7 end cap 500 which comprises base member 12 and containment member  
8 400 wherein support member 13 of base member 12 is positioned in  
9 slot 408. Also positioned between support member 13 and front  
10 cover 406 is a non-adhesive price label 410. Containment member  
11 400 extends for substantially the entire length of base member 12  
12 and thus, a plurality of non-adhesive price labels, such as label  
13 410, can be secured between support member 13 and front cover  
14 406. In accordance with the invention, containment member 400 is  
15 fabricated from flexible and resilient material to allow  
16 containment member 400 to flex in the event end cap 500 is used  
17 on a semi-circular or arcuate shelf. In one embodiment, price  
18 label containment member 400 is fabricated from extruded resin.

19 It is to be understood that the overall size of any of the  
20 foregoing embodiments of the end cap apparatuses of the present  
21 invention can be varied to accommodate price labels of different  
22 types and sizes.

23 The principles, preferred embodiments and modes of operation  
24 of the present invention have been described in the foregoing  
25 specification. The invention which is intended to be protected

1 herein should not, however, be construed as limited to the  
2 particular forms disclosed, as these are to be regarded as  
3 illustrative rather than restrictive. Variations in changes may  
4 be made by those skilled in the art without departing from the  
5 spirit of the invention. Accordingly, the foregoing detailed  
6 description should be considered exemplary in nature and not  
7 limited to the scope and spirit of the invention as set forth in  
8 the attached claims.